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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 09/226,396 | 01/06/99 | GAT | A AGX-14 |

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| EXAMINER |
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NGUYEN, K

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| ART UNIT | PAPER NUMBER |
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2881

DATE MAILED:

03/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/226,396

Applicant(s)

GAT et al.

Examiner

E. MYLEN

Group Art Unit

2881

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-31 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-2, 4-16, 19-23 and 26-31 is/are rejected.
- ☒ Claim(s) 3, 17-18 and 24-25 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Objected Informalities

The disclosure is objected to because of the following informalities:

In The Claims

Claim 3, line 4, "onto a determined location" should be deleted.

Appropriate correction is required.

Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "said optical element" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Rejection Under 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 10, 20, 27 and 30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Robinson et al.

Claims 1, 5, 10, 20 and 27-30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Moslehi et al.

Claims 1, 5, 8, 10, 11, 20, 27 and 30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Vosen.

Vosen discloses, in figs. 1-4, an apparatus for heat treating wafers. The apparatus includes a thermal processing chamber 12 for containing a wafer 14 which is rotated (see col. 5, lines 19-20); a heating device including a plurality of light sources 24 forming concentric rings and a plurality tuning light sources placed in between the concentric rings of light (see the abstract); reflective plates 36 and 38; temperature sensors 30; and a controller system 50.

Rejection Under 35 U.S.C. 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time an invention covered therein was made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 4, 6-7, 9, 12-16, 19, 21-23, 26 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vosen.

Vosen discloses all the features as discussed above except a focusing lens and a support structure as recited in claims 2 and 12; a laser diode as recited in claim 4; a ruled prismatic surface as recited in claims 6 and 21; a diffuse surface as recited in claims 9 and 22; a reflective material having a reflectivity of at least 0.9 as recited in claim 26; and the position of the optical element adjusted as recited in claims 28 and 29.

Using the focusing lens and the support structure for mounting the focussing lens is considered to be obvious variation in design, since the focussing lens and the support structure for mounting the focussing lens are well known in the art and in the optical system, thus would have been obvious to one skilled in the art to use the focusing lens and the support structure for mounting the focussing lens in the Vosen apparatus for heating the wafer.

Using the laser diode is considered to be obvious variation in design, since the laser diode is well known in the art for producing light, thus would have been obvious to one skilled in the art to use the laser diode in the Vosen apparatus for heating the wafer.

Using the ruled prismatic surface or the diffuse surface for reflecting light is considered to be obvious variation in design, since the ruled prismatic surface or the diffuse surface is well known in the art and in the optical system for reflecting light, thus would have been obvious to

one skilled in the art to use the ruled prismatic surface or the diffuse surface for reflecting light in the Vosen apparatus for heating the wafer.

Applying the reflective material having a reflectivity of at least 0.9 is considered to be obvious variation in design, since the reflective material having a reflectivity of at least 0.9 is well known in the art and in the optical system for reflecting light, thus would have been obvious to one skilled in the art to apply the reflective material having a reflectivity of at least 0.9 in the Vosen apparatus for heating the wafer.

Positioning the optical element with respect to the light source for reflecting light is also considered to be obvious variation in design, since the optical element positioned with respect to the light source for reflecting light is well known in the art and in the optical system for reflecting light, thus would have been obvious to one skilled in the art to position the optical element with respect to the light source for reflecting light in the Vosen apparatus for heating the wafer.

Claims 3, 17-18 and 24-25 would be allowable if rewritten to overcome the objection(s), set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Reasons for indicating allowable subject matter

The prior art fails to disclose an apparatus for heat treating semiconductor wafers, which includes means for moving a support structure having a focussing lens and a light source mounted thereon for directing light onto the wafer as recited in claims 3 and 17; a ruled prismatic surface

having a fixed pitch and a fixed facet angle as recited in claim 24; or a ruled prismatic surface having a fixed pitch with a variable facet angle as recited in claim 25.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- 1) Anderson et al. disclose an apparatus having light sources for heating wafers;
- 2) Thompson et al. disclose an apparatus having light sources for heating wafers; and
- 3) Najm et al. disclose an apparatus having light sources for heating wafers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner *Kiet T. Nguyen* whose telephone number is (703) 308-4855.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Papers related to Art Unit 2878 applications **only** may be submitted to Art Unit 2878 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 O.G. 30 (November 15, 1989). The Art Unit 2878 Fax Center number is (703) 308-7723.

K.T.N/Primary
March 25, 2001


KIET T. NGUYEN
PRIMARY EXAMINER